

perform has influenced many. He distinguished two factors in development: (1) the law of growth, which depends upon the inherited potentialities of the germinal material; and (2) the conditions of development, such as amount and distribution of yolk, pressure of membranes, and surrounding medium. In terms of these he sought to explain the foldings, the ingrowths, the outgrowths, and other processes in development. Prof. A. Rauber developed similar ideas in his *Formbildung und Formstörung*, and it is interesting to notice how this anatomist has of recent years made a specialty of crystallization. Prof. Sachs, on the botanical side, was also keenly interested from an early date in the problems of causal morphology.

The fresh movement has not, as yet, led to the solution of any big problem, but it has been attended with much detailed success. Hertwig and Driesch, Herbst and Dreyer, Wilson and Loeb, have been prominent among the many workers. The gist of their method is by artificial *Formstörung* to get hold of clues which may aid in the understanding of normal *Formbildung*; and although there is much disagreement—naturally incident on a new departure—the work of the experimental school has impressed biologists with the hopefulness of looking for the immediate stimuli and essential conditions which determine each successive expression of the potentialities of the germ-plasm.

Chapter V.

Study of Structure (Vegetable Morphology).

Early Anticipations—Metamorphosis in Flowering Plants—Wolff—Goethe—Subsequent Development—Foundations of Exact Morphology—Comparative Embryology—Alternation of Generations—Study of Algae, Fungi, and Lichens.

Although it is possible to find in the works of Aristotle and Theophrastus, and other ancient authorities, in-